

Notice of Allowability

Application No.

10/616,375

Examiner

Kim Huynh

Applicant(s)

AVERY, JAMES M.

Art Unit

2182

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to application filed 7/9/03.
2. ☒ The allowed claim(s) is/are 1-30.
3. ☒ The drawings filed on 09 July 2004 are accepted by the Examiner.
4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some* c) ☐ None of the:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
6. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
- (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
- 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
- (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☒ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☒ Information Disclosure Statements (PTO-1449 or PTO/SB/08), Paper No./Mail Date 7/9/04
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☐ Interview Summary (PTO-413), Paper No./Mail Date _____
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____

EXAMINER'S AMENDMENT/COMMENTS

Election/Restrictions

1. Restriction to one of the following inventions is required under 35 U.S.C. 121:
 - I. Claims 1-30, drawn to input output addressing, classified in class 710, subclass 4.
 - II. Claims 31-40, drawn to the data structure, classified in class 710, subclass 52.

The inventions are distinct, each from the other because of the following reasons:

Inventions I and II are related as combination and subcombination. Inventions in this relationship are distinct if it can be shown that (1) the combination as claimed does not require the particulars of the subcombination as claimed for patentability, and (2) that the subcombination has utility by itself or in other combinations (MPEP § 806.05(c)). In the instant case, the combination as claimed does not require the particulars of the subcombination as claimed because the data structure specified in invention II is not required for the patentability of invention I. The subcombination has separate utility such as contents validation.

Because these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their different classification, restriction for examination purposes as indicated is proper.

2. During a telephone conversation with Mr. Paul E. Kudirka on 07/09/04, a provisional election was made without traverse to prosecute the invention I, claims 1-30. Claims 31-40 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

EXAMINER'S AMENDMENT

3. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

4. The application has been amended as follows to update the related application information:

- a. Page 1, line 6, before "by", insert -- , now US Pat. 6,611,883 --;
- b. Page 1, line 10, before "entitled", insert -- , now US Pat. 6,704,831 --;
- c. Page 1, line 14, before "entitled", insert -- , now US Pat. 6,622,193 --;
- d. Cancel claims 31-40.

5. This application is in condition for allowance except for the presence of claims 31-40 to invention II, non-elected without traverse. Accordingly, claims 31-40 have been cancelled.

Allowable Subject Matter

6. The following is an examiner's statement of reasons for allowance:

Claims 1, 13, 25 and 31 recite, inter alia, an apparatus and method for performing speculative prefetches for a PCI DMA read request in a PCI-InfiniBand bridge system having a update mechanism for computing the next address from the read address for the initial InfiniBand RDMA request in response to the data received and repeat mechanism generating a new RDMA read request using the next address.

The references of record do not teach or suggest the aforementioned limitation, nor would it be obvious to modify those references to include such limitation.

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Gates et al. (US 6,085,278) discloses transferring data in a PCI-Fiber Channel bridge with prefetching.

White Paper by Mellanox Technologies Inc, "Comparative I/O Analysis, InfiniBand Compared with PCI-X, Fiber Channel, Gigabit Ethernet, Storage over IP, HyperTransport, and RapidIO" discloses that Fiber Channel does not support RDMA.

Biren et al. (US 6,658,521), filing date 01/30/01, discloses address translation on PCI bus over infiniband network.

Petty et al. (US 6,594,712) discloses direct DMA for data transfer between InfiniBand and PCI link without prefetching.

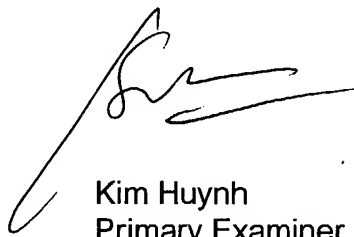
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Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kim Huynh whose telephone number is (703) 308-1678.

Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist whose telephone number is (703) 305-3900.



Kim Huynh
Primary Examiner
Art Unit 2182

KH
July 20, 2004

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